

REMARKS/ARGUMENTS

Claims 4-23 and 25-27 remain pending herein.

The applicants thank examiner Sorkin for the courtesies extended during an interview conducted on July 15, 2003. The substance of the discussion during that interview is incorporated in the following remarks.

Entry of the above amendments is respectfully requested. The amendments set forth above include the cancellation of Claim 3, correction of a spelling error in claim 16 and correction of the dependency of Claim 5. All of these changes correspond to requests in the May 16, 2003 Office Action and are merely editorial in nature. Accordingly, it is respectfully submitted that entry of the above amendments would be proper under 37 C.F.R. 1.116.

The May 16, 2003 Office Action includes a statement that should Claim 22 be found allowable, Claim 3 will be objected to under 37 C.F.R. 1.75. In response, Claim 3 is canceled above.

The Office Action also notes that in Claim 16, Line 6, "nagative" should read --negative--. In response, Claim 16 is amended as set forth above to correct this spelling error.

Claim 5 was rejected under 35 U.S.C. 112, 2nd paragraph due to its dependence from Claim 1, which is now canceled. In response, Claim 5 is amended as set forth above to depend from Claim 4.

Reconsideration and withdrawal of this rejection are requested.

Claim 4, as well as Claims 12, 14, 16, 18, 20, 22, 23 and 26, all of which depend from Claim 4, were rejected under 35 U.S.C. 103(a) over Japanese 8-185850 (JP '850) in view of U.S. Patent No. 6,106,975 (Watanabe '975).

JP '850 discloses a battery in which positive electrodes and negative electrodes are layered alternately via separators, and respective collectors of the positive electrodes and negative electrodes are extended as leads for achieving connection with the positive electrodes and the negative electrodes. For example, in the embodiment shown in Figure 4, 46 positive electrodes 2 and 47 negative electrodes 3 are layered alternately to create a rectangular layered body 14.

According to JP '850, because respective collectors 5 and 7 of the positive electrode 2 and the negative electrode 3 are provided with fuses 5a and 7a having a prescribed cross-sectional area, said fuses 5a and 7a are blown out when an internal short-circuit has occurred in order to prevent the battery from being damaged. Because the positive electrode 2 and

negative electrode 3 are electrically disconnected where the internal short-circuit has occurred, JP '850 states, the battery can be reused (English-language translation of JP '850, paragraph [0018]). Accordingly, where an internal short-circuit occurs, damage pertains only to the positive and the negative electrodes where the short-circuit occurred, and damage to the battery and the surrounding area is minimized (English-language translation of JP '850, paragraph [0039]). Furthermore, JP '850 states, because only the positive and the negative electrodes where the internal short-circuit occurred are cut off, the battery becomes operational once again (English-language translation of JP '850, paragraph [0039]).

In an example described in JP '850, a battery was charged fully to an open voltage of 4.16 V, and a nail was inserted to simulate an internal short-circuit. The result was that the voltage dropped to 1.45 V in 2 seconds after the simulation began, and the voltage was gradually restored during the following minute and returned to 4.03 V (English-language translation of JP '850, paragraph [0040]).

Accordingly, in JP '850, each electrode is in a separate parallel circuit, such that if an internal short-circuit occurs, only those electrodes where the short-circuit occurred will be cut off, and the remainder of the battery will remain operational. To the contrary, where a single positive electrode and a single negative electrode are wound (with separators therebetween) and multiple tabs are attached to each of the respective electrodes, it would not be possible to isolate voltage generation (as is done in JP '850) in such a way that fusing of a single lead will affect only the current flowing across that lead (whereby each lead acts independently of the other leads).

Accordingly, if one of skill in the art were reviewing JP '850, it would not be obvious to attempt to modify JP '850 by attempting to change the battery from a laminated electrode to a wound electrode as disclosed in Watanabe '975, because such a modification would eliminate one of the critical functions of the design as disclosed in JP '850. In particular, such a modification would eliminate the ability for internal damage to the isolated. Any modification of JP '850 to have a single positive electrode and a single negative electrode, with each electrode having a plurality of leads, would result in a battery in which a short-circuit in any part of the battery of such a magnitude that one of the leads fuses would result in all of the leads fusing. In such a battery, each of the positive leads (which would be connected at one end to the positive electrode and at the other end to the positive collector) would function together in carrying current from the positive electrode to the positive collector, and the occurrence of any one of those leads fusing would depend on the *combined*

cross-sectional area of all of the positive leads taken together. Fusing of the first of the positive leads would effectively result in a decrease in the amount of the combined cross-sectional area, thereby increasing the impetus for the remaining leads to fuse, such that all of the leads would fuse in rapid succession and/or simultaneously.

In view of the above, it would not have been obvious to attempt to modify JP '850 to be in a wound form as in Watanabe '975. Accordingly, reconsideration and withdrawal of this rejection are requested.

Claim 7, and Claims 17, 19, and 21 which depend from Claim 7, were rejected under 35 U.S.C. 102(b) over JP '850.

As noted above, JP '850 discloses a battery in which each positive electrode 2 has a respective collector 5 with an extended lead 5a, and each negative electrode 3 has a respective collector 7 with an extended lead 7a. Accordingly, JP '850 fails to disclose a battery having a plurality of tabs connected to a positive electrode and a plurality of tabs connected to a negative electrode. In JP '850, each electrode is connected with only a single lead. Claim 7, on the other hand, recites that a plurality of tabs is connected to the positive electrode and a plurality of tabs is connected to the negative electrode. Accordingly, reconsideration and withdrawal of this rejection are requested.

In addition, for the reasons discussed above, it would not have been obvious to attempt to modify JP '850 by attempting to change the battery from a laminated electrode to a wound electrode as disclosed in Watanabe '975, because such a modification would eliminate the function of isolating voltage generation such that fusing of a single lead affects only the current flowing across that lead, which is a critical function of the design disclosed in JP '850.

Claims 8, 13, 15, 25 and 27 were rejected under 35 U.S.C. 103(a) over JP '850.

As discussed above, JP '850 fails to disclose or suggest a battery in which a plurality of tabs is connected to a positive electrode and a plurality of tabs is connected to a negative electrode, and fails to contain disclosure which would have motivated one of skill in the art to attempt to modify the batteries disclosed therein so as to include multiple tabs connected to each of the positive and negative electrodes.

Accordingly, reconsideration and withdrawal of this rejection are requested.

Claim 11 was rejected under 35 U.S.C. 103(a) over JP '850 in view of U.S. Patent No. 5,849,431 (Kita '431).

The May 16, 2003 Office Action contains statements that Kita '431 discloses that it is

possible to minimize internal resistance by increasing the number of tabs. Kita '431, like Watanabe '975, is directed to a battery which includes a wound electrode, as opposed to a stacked electrode as disclosed in JP '850. For the reasons discussed above, it would not have been obvious to modify the electrode structure of JP '850 so as to be a wound electrode as disclosed in Kito '431, because such a modification would eliminate a critical function of the design disclosed in JP '850.

Reconsideration and withdrawal of this rejection are requested.

Claims 5, 6 and 10 were rejected under 35 U.S.C. 103(a) over JP '850 in view of Watanabe '975, further in view of Kita '431.

The May 16, 2003 Office Action contains a statement that Kito '431 discloses that it is possible to minimize internal resistance by increasing the number of tabs. Such alleged disclosure does not overcome the shortcomings (discussed above) of JP '850 and Watanabe '975 as attempted to be applied against Claim 4, from which Claims 5, 6 and 10 each ultimately depend.

Reconsideration and withdrawal of this rejection are requested.

Claim 9 was rejected under 35 U.S.C. 103(a) over JP '850 in view of U.S. Patent No. 597,969 (Ferguson '969). Ferguson '969 is cited for alleged disclosure of providing a tab fuse with a narrow portion. Such disclosure would not overcome the shortcomings (discussed above) of JP '850 as attempted to be applied against Claim 7, from which Claim 9 ultimately depends. Accordingly, reconsideration and withdrawal of this rejection are requested.

In view of the above, Claims 4-23 and 25-27 are in condition for allowance.

If the Examiner believes that contact with Applicant's attorney would be advantageous toward the disposition of this case, the Examiner is herein requested to call Applicant's attorney at the phone number noted below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

Respectfully submitted,

October 6, 2003

Date



Kevin C. Brown

Reg. No. 32,402

KCB/jms

BURR & BROWN
P.O. Box 7068
Syracuse, NY 13261-7068

Customer No.: 025191
Telephone: (315) 233-8300
Facsimile: (315) 233-8320

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